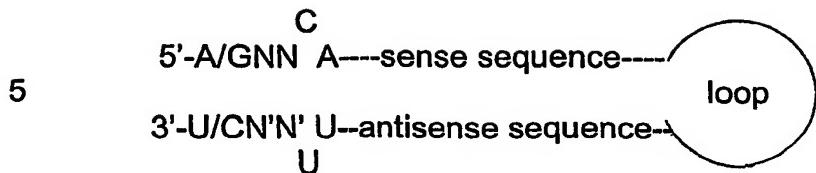


CLAIMS

1. A recombinant vector for the correct, stable and effective expression in mammalian cells of a siRNA or a miRNA, comprising from 5' to 3':
- 5 a) an RNA polymerase II dependent promoter sequence derived from the U1 snRNA gene;
- b) suitable restriction sites for cloning the sequence that transcribes a pre-siRNA or a pre-miRNA;
- c) a sequence transcribing the pre-siRNA comprising: in position +1 an A or a G residue; a sequence from 21 to 23 nucleotides corresponding to a sense region of the mRNA transcribed by the gene to be silenced, that constitutes the first segment of the stem of the pre-siRNA; a sequence selected from a pre-miRNA sequence that constitutes the loop region of the pre-siRNA; a sequence from 21 to 23 nucleotides corresponding to the antisense region of the mRNA transcribed by the gene to be silenced that
- 10 constitutes the second segment of the stem of the pre-siRNA; two final residues UU protruding in such a way that the following structure is obtained:
- 15

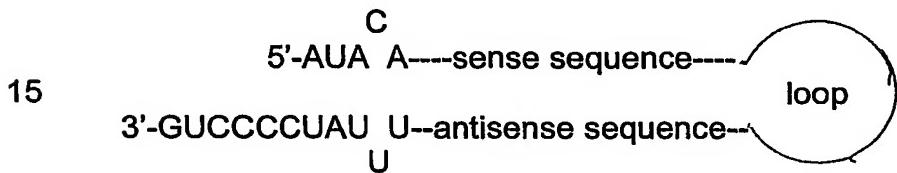


- or alternatively a sequence transcribing the pre-miRNA;
- d) termination sequences derived from the sequence at 3' of the gene for U1 snRNA which are necessary and sufficient for the correct formation of the 3' of the pre-siRNA or of the pre-miRNA.
2. The vector according to Claim 1, wherein the cloning site for the 5' of the sequence transcribing the pre-siRNA is Bgl II.
3. The vector according to Claim 1, wherein the sequence transcribing the pre-siRNA further comprises at termini 5' and 3' such sequences that the transcribed pre-siRNA has the following structure:
- 25
- 30



where N is A, U, G or C and N' is its complementary nucleotide.

- 10 4. The vector according to Claim 3, wherein the sequence transcribing the pre-siRNA comprises at the 5' and 3' termini such sequences that the transcribed pre-siRNA has the following structure:



5. The vector according to claim 4 wherein the termination sequences derived from the sequence at 3' of the gene for U1 snRNA are as follows:

20 CCCCTG/ACTTTCTGGAGTTCAAAAGTAGAC.

6. Vector according any of previous claims further comprising suitable sequences to make inducible the RNA pol II promoter.

7. A composition for gene therapy comprising the vector according to any of previous claims.

25 8. Use of the vectors according to any of claims from 1 to 6 for therapeutical applications.